May 31, 1932. H. GUEDRY 1,860,711

WELL CAPPER

Filed Feb. 24, 1930

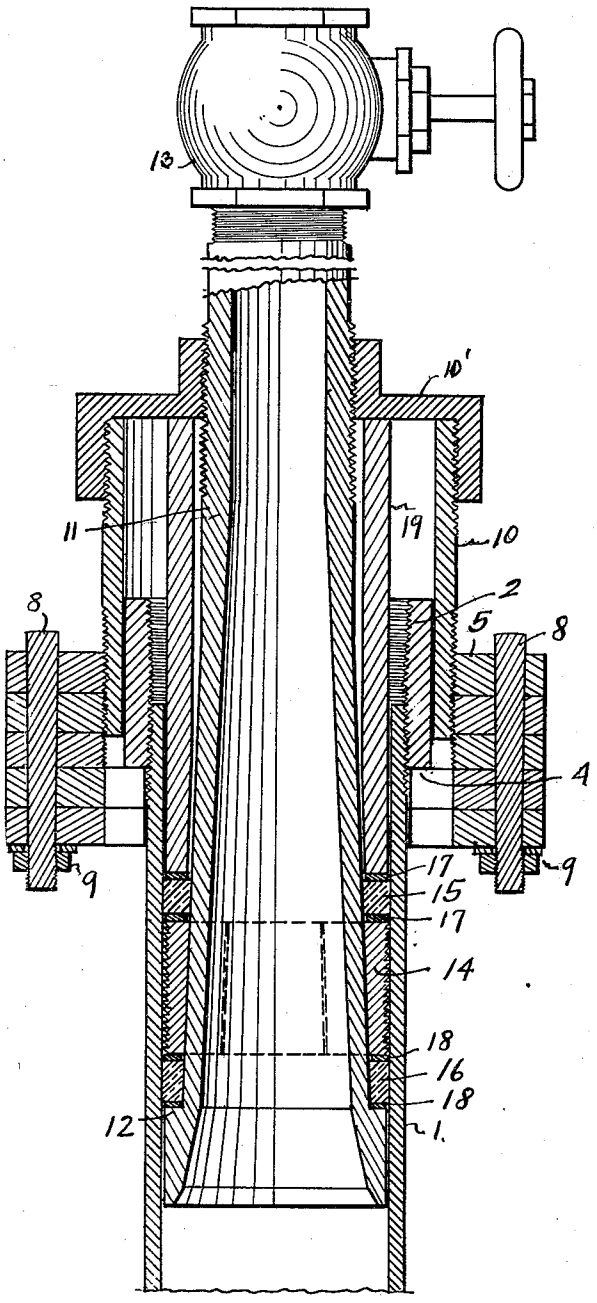


Fig. 1.

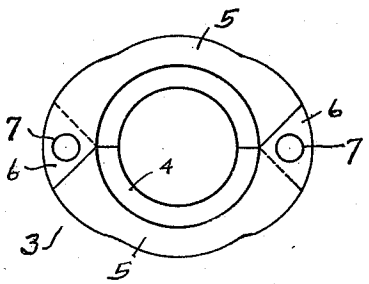


Fig. 2.

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UNITED STATES PATENT OFFICE

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WELL CAPPER

Application filed February 24, 1930. Serial No. 430,471.

This invention relates to new and useful improvements in a well capper.

One object of the invention is to provide apparatus of the character described whereby the upper end of a pipe or casing set in a well bore may be closed so as to prevent the well from blowing out unrestrained.

Another object of the invention is to provide an apparatus of the character described which may be readily attached to the upper end of the casing, or other pipe in the well and securely anchored thereto to the end that it will not be blown off and disrupted by the internal pressure of the well, and which may be readily removed therefrom.

With the above and other objects in view the invention has particular relation to certain novel features of construction, operation and arrangement of parts, an example of which is given in this specification and illustrated in the accompanying drawings wherein:

Figure 1 shows a vertical sectional view of the apparatus and

Figure 2 shows a plan view of a clamp employed.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in each of the figures, the numeral 1 designates the well casing set in the bore, threaded onto the upper end of which there is a conventional collar 2. The numeral 3 designates a circular clamp as a whole which has an inside shoulder 4 which engages underneath the collar 2 when the clamp is secured around the casing 1. This clamp is formed of opposing arcuate sections 5, 5 whose ends have the intermeshing fingers 6 which have the bearings 7 therethrough to receive the pins 8 by means of which the sections are detachably secured together. These bearings and pins taper downwardly and the lower end of the pins are threaded to receive the retaining nuts 9 and the sections of the clamp are thus detachably secured together.

There is a large nipple 10 which is fitted over the coupling 2 and screwed into the clamp 3, and there is a reducing nipple 10′ threaded onto the upper end of the nipple 10. There is a tubular mandrel 11 which is downwardly flared and whose lower end is provided with the external annular shoulder 12. The lower end of this mandrel extends down into the well casing and the upper end of the mandrel is threaded through the reducing nipple 10 by left hand threads and the upper end of said nipple is equipped with a suitable control valve 13. Arranged around the lower end of the mandrel 11 are the pipe engaging slips 14 whose outer surfaces are toothed and above and below said slips are the annular packing rings 15 and 16 respectively which are confined between the metal washers 17, 17 and 18, 18 one of the latter of which is supported on the shoulder 12. There is a sleeve like setting nipple 19 around the mandrel whose lower end is seated on the upper washer 17 and whose upper end abuts the reducing nipple 11.

In case a well is equipped with this apparatus, and should start to blow out, a wrench may be applied to the upper end of the mandrel to hold it against turning and the clamp 3, and nipples 10, 10′ and may be turned to screw the mandrel upwardly through the reducing nipple 10′ and as it moves upwardly the packing rings 16 will be expanded against the casing 1 to form fluid tight joints and the upward movement of the mandrel relative to the slips 14 will force said slips outwardly into secure engagement with the casing thus securely anchoring the capping device. The valve 13 may then be closed and the well thus closed.

The drawings and description disclose what is now considered to be a preferred form of the invention by way of illustration only, while the broad principle of the invention will be defined by the appended claims.

What I claim is:—

1. The combination with a casing in a well bore, of a tubular mandrel in the upper end thereof, an anchor composed of hinged parts secured around the upper end of the casing, means through which said mandrel is adjustably connected to said anchor, casing engaging means associated with said mandrel, means through which said engaging means may be actuated into engaging relation with

the casing when the mandrel is adjusted into one position and into released position when the mandrel is adjusted into another position.

2. The combination with a casing in a well bore, of a tubular downwardly flared mandrel in the casing, a sectional anchor connected to the casing and with which said mandrel has a threaded connection, casing engaging means on the mandrel, a setting nipple within the upper end of the casing and interposed between said anchor and casing engaging means, packing around the mandrel between the casing engaging means and the setting nipple.

3. The combination with a casing in a well bore, of a tubular downwardly flared mandrel in the casing, having an external support thereon, an anchor connected to the casing and with which said mandrel has a threaded connection, casing engaging means on the mandrel, packing between the support and casing engaging means, a setting nipple interposed between said anchor and casing engaging means, and packing means around the mandrel and between said nipple and casing engaging means.

4. The combination with a casing in a well bore, of a tubular downwardly flared mandrel in said casing and having an external abutment, packing means, and casing engaging means around the mandrel and above said abutment, a setting nipple around the mandrel and above said casing engaging means and packing means, an anchor attached to the casing, through which said mandrel is threaded, and against which the upper end of said setting nipple abuts.

5. The combination with a casing in a well bore, of a tubular mandrel in the casing having an external abutment, packing means and casing engaging means around the mandrel above said abutment, a setting nipple around the mandrel above said casing engaging means and packing means, an anchor attached to the casing comprising a tubular nipple and a reducing nipple attached thereto and through which the mandrel is threaded.

In testimony whereof I have signed my name to this specification.

HALE GUEDRY.